

Application No.: 10/717330

Docket No.: TOW-050

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A fuel cell system comprising a fuel cell stack formed by stacking a plurality of fuel cells each including an electrolyte electrode assembly and a pair of separators for sandwiching said electrolyte electrode assembly, said electrolyte electrode assembly including a pair of electrodes and an electrolyte interposed between said electrodes; a heating mechanism for heating at least one of said fuel cells by external electrical energy; a power generation circuit having a plurality of loads, wherein each fuel cell is connected to a corresponding one of said plurality of loads, wherein the power generation circuit for causing said fuel cell to generate electrical energy; and a switching mechanism for selectively disconnecting one or more of said fuel cells from said corresponding one of said plurality of loads of said power generation circuit to stop generating electrical energy.

2. (Previously Presented) A fuel cell system according to claim 1, wherein said plurality of fuel cells are stacked vertically, and said heating mechanism is provided at least above an outermost fuel cell at an upper end of said fuel cell stack.

3. (Original) A fuel cell stack according to claim 1, wherein said power generation circuit includes an electric heater.

4. (Previously Presented) A method of warming up a fuel cell stack formed by stacking a plurality of fuel cells each including an electrolyte electrode assembly and a pair of separators for sandwiching said electrolyte electrode assembly, said electrolyte electrode assembly including a pair of electrodes and an electrolyte interposed between said electrodes, said method comprising the steps of:

(1) warming up at least one of said plurality of fuel cells by external electrical energy until a temperature of said at least one fuel cell reaches a power generation temperature;

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(2) causing said at least one of said plurality of fuel cells to generate electrical energy for warming up an adjacent fuel cell;

(3) causing said at least one of said plurality of fuel cells and said adjacent fuel cell to generate electrical energy for warming up still another fuel cell; and

repeating the step (3) for all of said plurality of fuel cells of said fuel cell stack for warming up all of said plurality of fuel cells.

5. (Previously Presented) The method according to claim 4, wherein said plurality of fuel cells are stacked vertically, and include a coolant flow field for supplying a coolant to exchange heat, said method comprising the step of:

warming up an outermost fuel cell using external energy for causing said outermost fuel cell to generate electrical energy, and warming up an underlying fuel cell adjacent to said outermost fuel cell.

6. (Previously Presented) The method according to claim 5, wherein after all of said plurality of fuel cells are warmed up, said coolant is circulated through said coolant supply field of said fuel cells.

7. (Previously Presented) The method according to claim 4, wherein when one of said plurality of fuel cells is warmed up to a predetermined temperature, a warming up operation of said fuel cell having said predetermined temperature is finished.

8. (Previously Presented) The method according to claim 4, further comprising the steps of:

measuring a temperature of one or more of said plurality of fuel cells; and

warming up at least one fuel cell having the highest temperature by the external electrical energy.

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9. (Previously Presented) The method according to claim 4, wherein a plurality of fuel cell stacks are warmed up, and said method further comprising the step of:

after warming up all of the fuel cells of one fuel cell stack, causing said one fuel cell stack to generate electrical energy for warming up all of the fuel cells of another fuel cell stack.

10. (Previously Presented) The method according to claim 9, wherein after temperature of a coolant circulated through said one fuel cell stack reaches a predetermined temperature, said coolant is circulated through another fuel cell stack for warming up said other fuel cell stack.

11. (New) A fuel cell system according to claim 1, further comprising:
a separate heating mechanism for heating a coolant that is supplied to said fuel cells.